

REMARKS

This Amendment is filed in response to the Final Office Action mailed on October 3, 2005, and is filed herewith a Request for Continuing Examination. All objections and rejections are respectfully traversed.

Claims 1-68 are currently pending.

Claims 54-68 are added to better claim the invention.

Request for Interview

The Applicant respectfully requests a telephonic interview with the Examiner after the Examiner has had an opportunity to consider this Amendment, but before the issuance of the next Office Action. The Applicant may be reached at 617-951-3067.

Objections to Drawings

At page 2 of the Office Action, the Examiner rejected to the drawings filed with the response on May 25, 2006. Applicant has filed a revised set of drawings. In Fig. 1 the numeric tag for "CLIENT (WINDOWS)" is changed from "1960a" to "190a". Figs. 9A, 9B, 10, 11, and 12 are the same as the originally filed drawings.

Claim Rejections – 35 USC § 102

At paragraph 7 of the Office Action, claims 1-14 and 16-53 were rejected under 35 U.S.C. §102 as being anticipated over Permut et al., US Patent No. 6,260,115, herein-after Permut.

The present invention, as set forth in representative claim 1, comprises in part:

1. A method for a storage operating system implemented in a storage system to optimize the amount of readahead data retrieved for a read stream established in a data container stored in the storage system, the method comprising:

receiving a client read request at the storage system, the client read request indicating client-requested data for the storage operating system to retrieve from the data container containing the read stream;

determining whether the storage operating system is permitted to retrieve readahead data from the data container in response to the received client read request;

if it is determined that the storage operating system is permitted to retrieve readahead data from the data container, performing the steps of:

(i) *selecting an amount of readahead data to retrieve from the data container based on a plurality of factors stored within a readset data structure associated with the read stream; and*

(ii) retrieving the selected amount of readahead data from the data container.

By way of background, Permut discloses a method for detecting and remembering sequential access patterns for the purpose of prestaging tracks ahead of the current access request. Prestaging tracks is based on sequential hints and if current access is a continuation of a list entry. In other words, prestaging is based on commands in Permut.

Applicant respectfully urges that Permut does not disclose Applicant's claimed novel *selecting an amount of readahead data to retrieve from the data container based*

on a plurality of factors stored within a readset data structure associated with the read stream. In further detail, in Applicant's claimed invention, each read stream includes a readset data structure that gives the plurality of factors to the file system to mange each read stream separately with read ahead data. The file system has the ability to individually adjust each readahead operation for each read stream by appropriately modifying configuration parameters stored in the read stream's readset data structure. The readset data structure may for example be a set of metadata. In contrast, Permut uses a plurality of commands to control prestaging such as hints or previous access is a continuation. There is no disclosure of storing a plurality of factors with a readset data structure associated with the readstream for using in determing the amount of readahead data.

Accordingly, Applicant respectfully urges that Permut is legally insufficient to anticipate the present claims under 35 U.S.C. §102 because of the absence of the Applicant's claimed novel *selecting an amount of readahead data to retrieve from the data container based on a plurality of factors stored within a readset data structure associated with the read stream.*

Claim Rejections – 35 USC § 103

At paragraph 8 of the Office Action, claim 15 was rejected under 35 U.S.C. §103 as being unpatentable over Permut, in view of Vishlitzky et al., US Patent No. 5,649,156, hereinafter Vishlitzky.

PATENTS
112056-0148
P01-1631

Applicant respectfully notes that claim 15 is a dependent claim that depends from an independent claim believed to be in condition for allowance. Accordingly, claim 15 is believed to be in condition for allowance.

All independent claims are believed to be in condition for allowance.

All dependent claims are believed to be dependent from allowable independent claims.

Applicant respectfully solicits favorable action.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,


A. Sidney Johnston
Reg. No. 59,548
CESARI AND MCKENNA, LLP
88 Black Falcon Avenue
Boston, MA 02210-2414
(617) 951-2500



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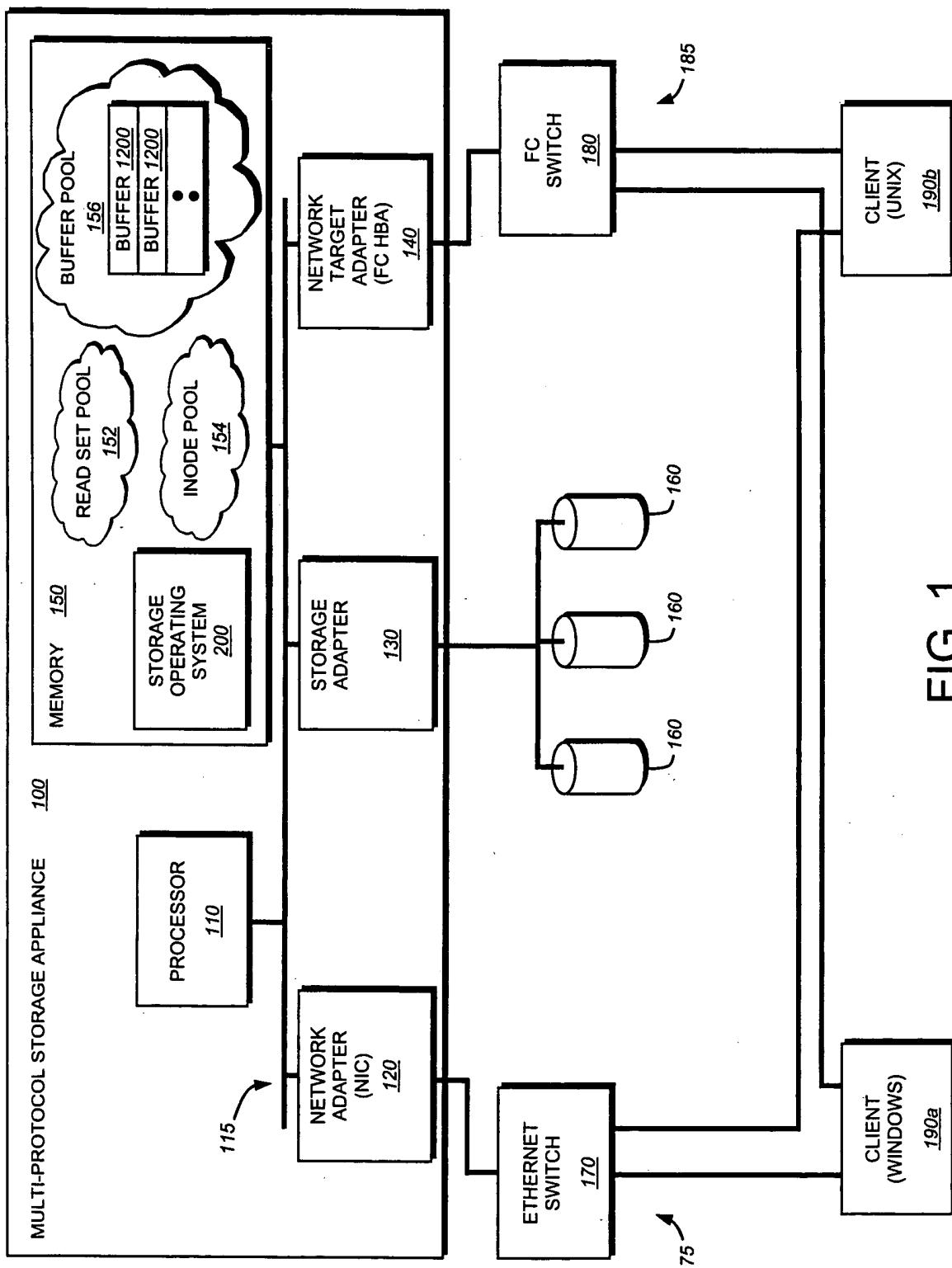


FIG. 1

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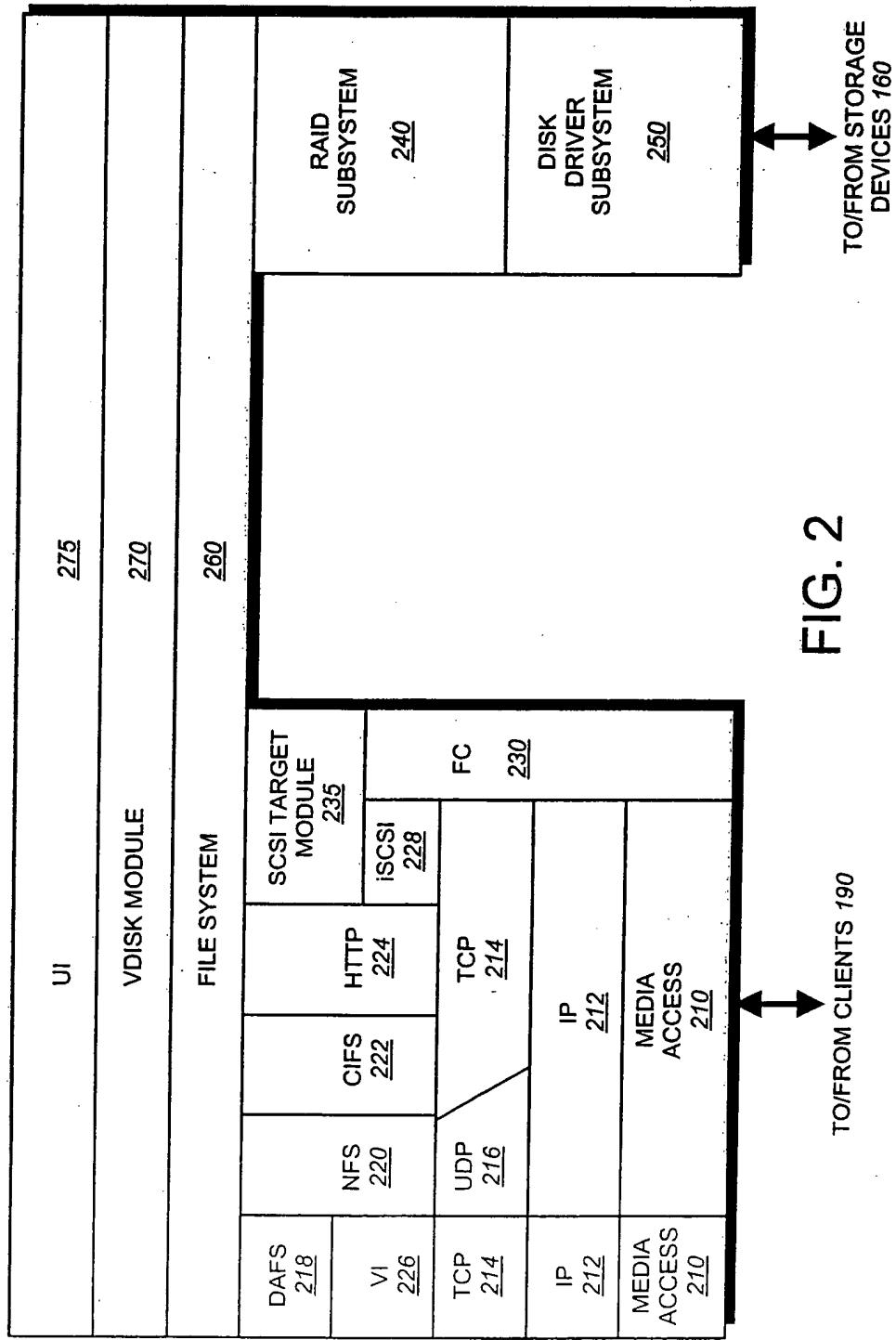


FIG. 2

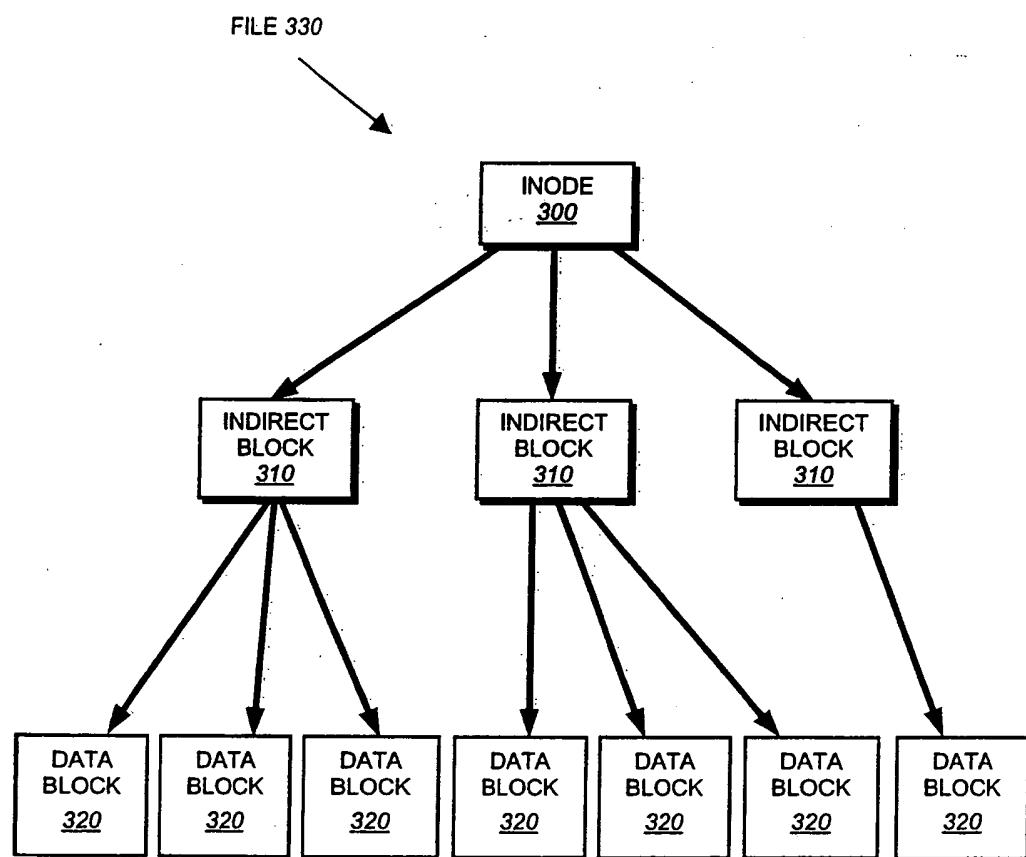


FIG. 3

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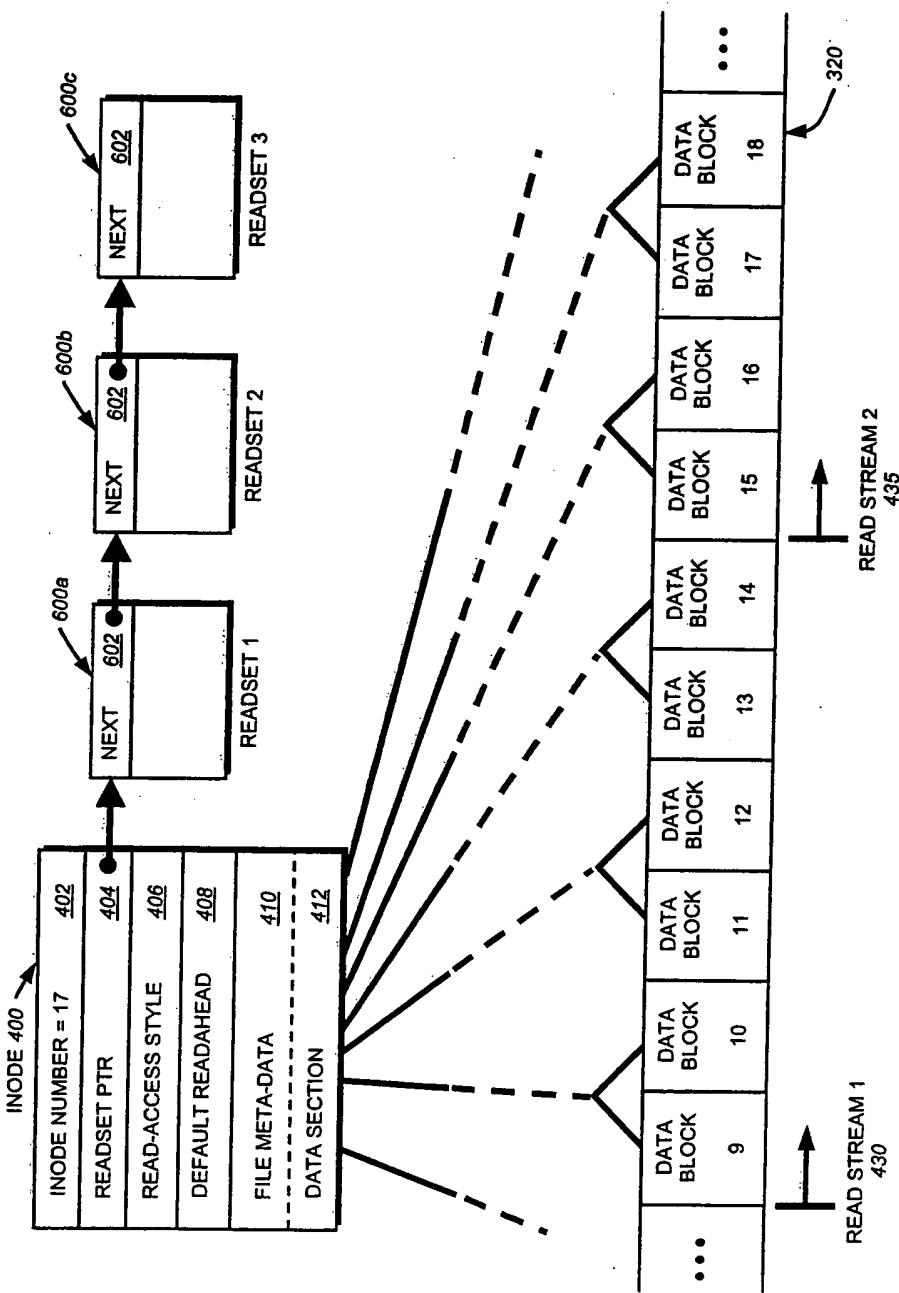


FIG. 4

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FILE SIZE	NUMBER OF READSETS
< 64 kB	0
64 kB-512 kB	1
512 kB-50 MB	2
50 MB-1 GB	5
1 GB-10 GB	10
> 10 GB	15

500

510

520

FIG. 5

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READ SET 600	
NEXT POINTER	<u>602</u>
LEVEL	<u>604</u>
COUNT	<u>606</u>
LAST READ OFFSET	<u>608</u>
LAST READ SIZE	<u>610</u>
NEXT READAHEAD	<u>612</u>
READAHEAD SIZE	<u>614</u>
FLAGS	<u>616</u>

FIG. 6

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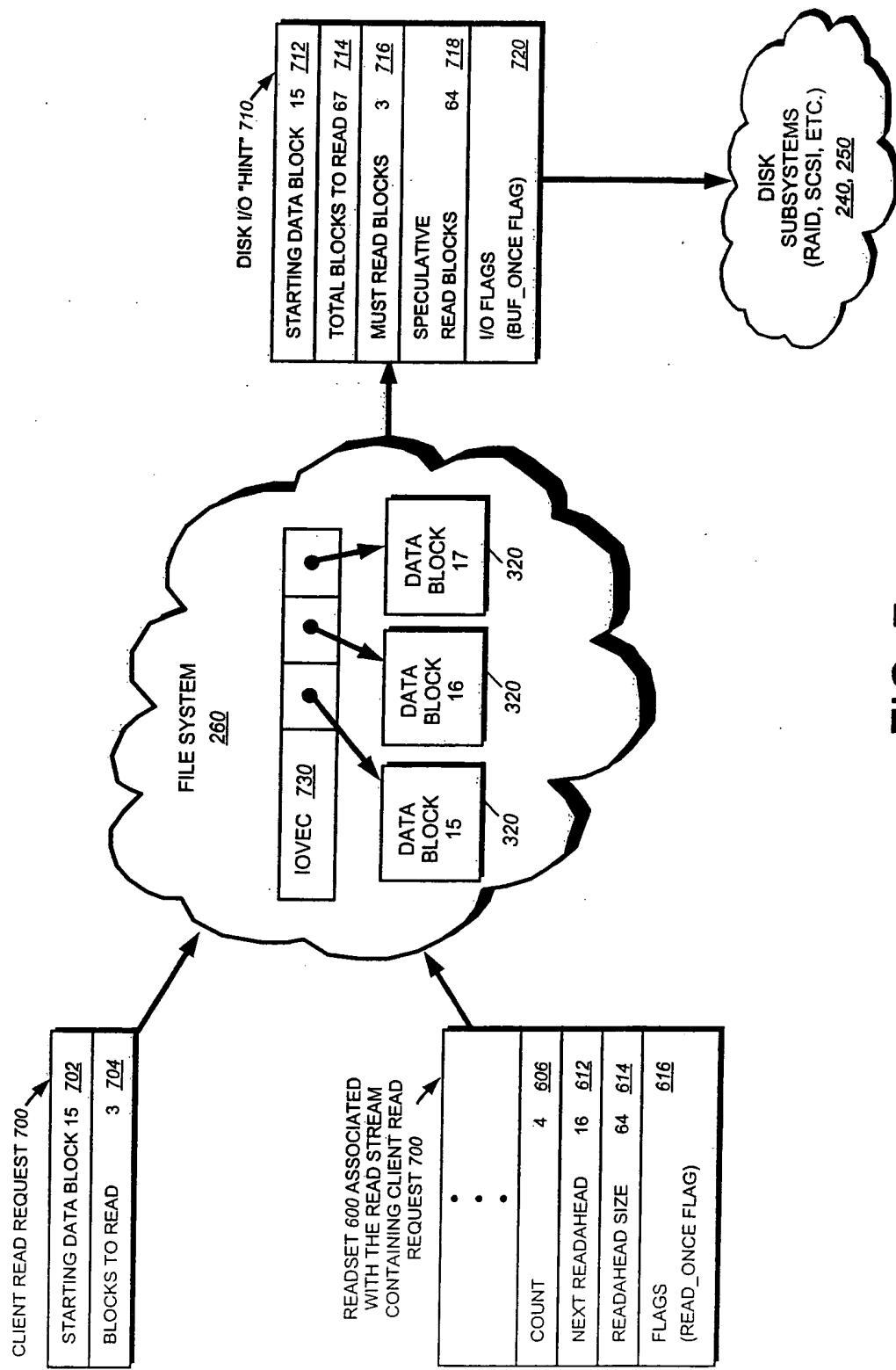


FIG. 7

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< 64 kB	2N
64 kB–128 kB	4N
128 kB–256 kB	6N
256 kB–1024 kB	2 • (READ SIZE)
1024 kB–10 MB	1 • (READ SIZE)
> 10 GB	FIXED UPPER LIMIT

E.g., N=32 BLOCKS

FIG. 8

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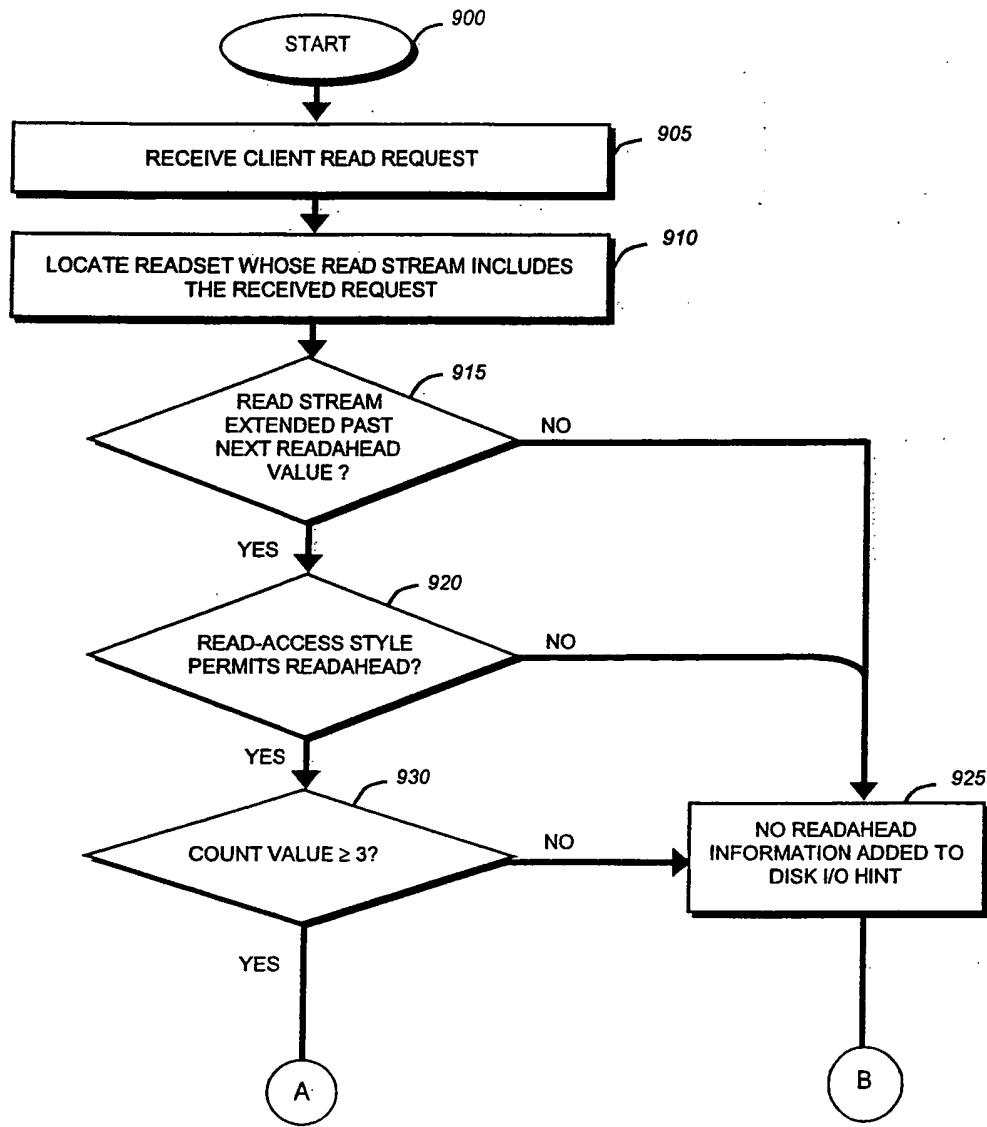


FIG. 9A

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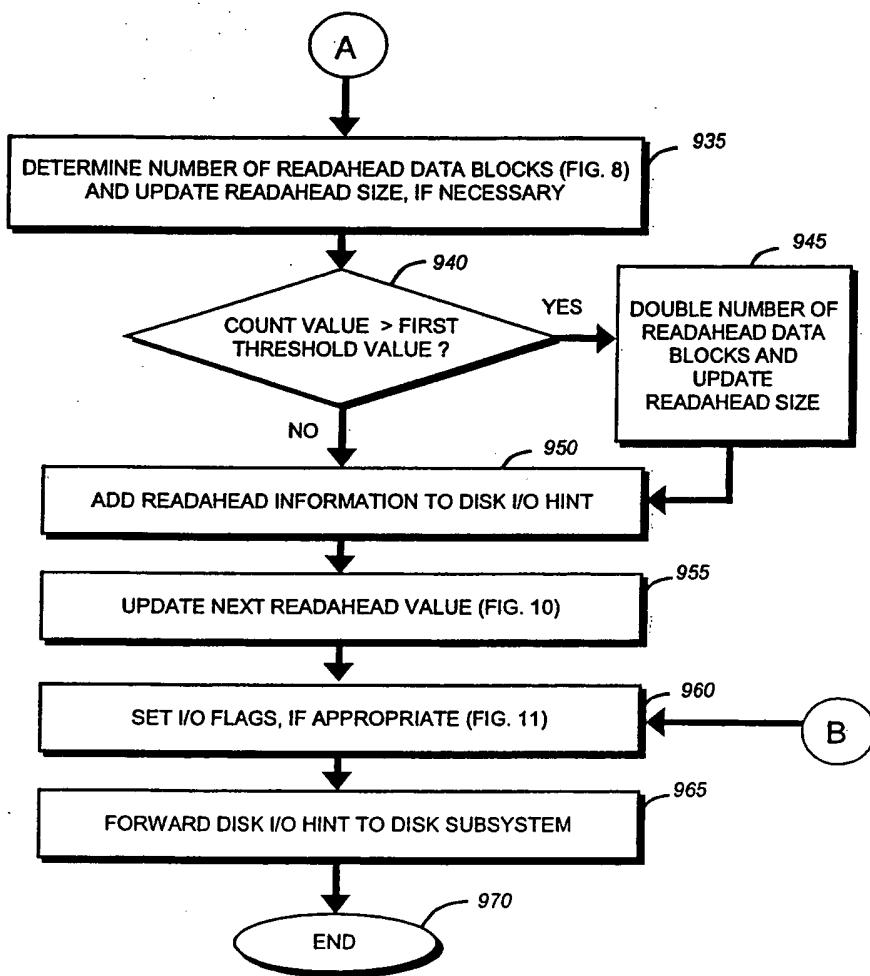


FIG. 9B

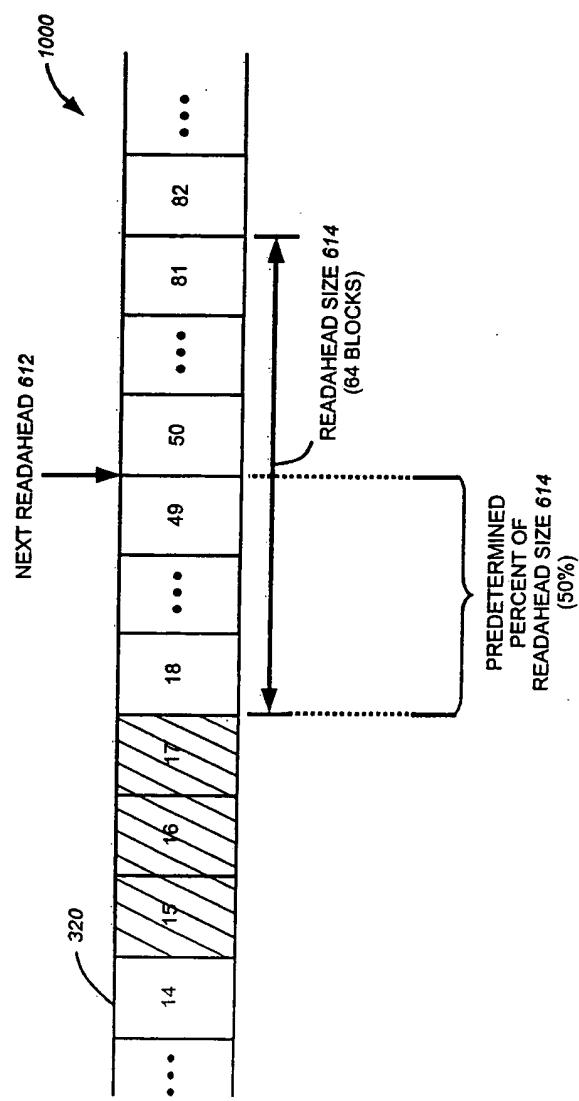


FIG. 10

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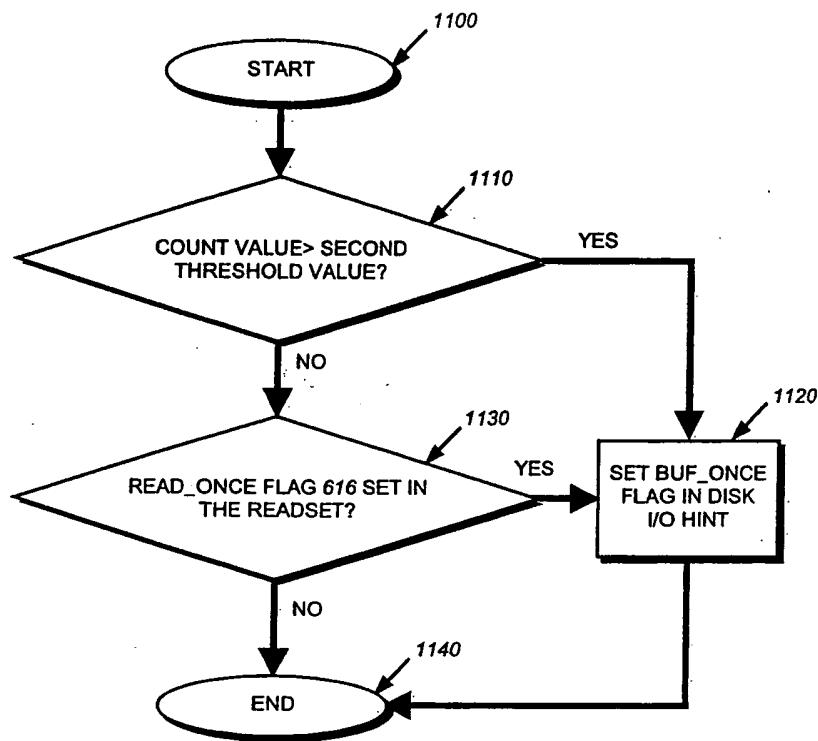


FIG. 11

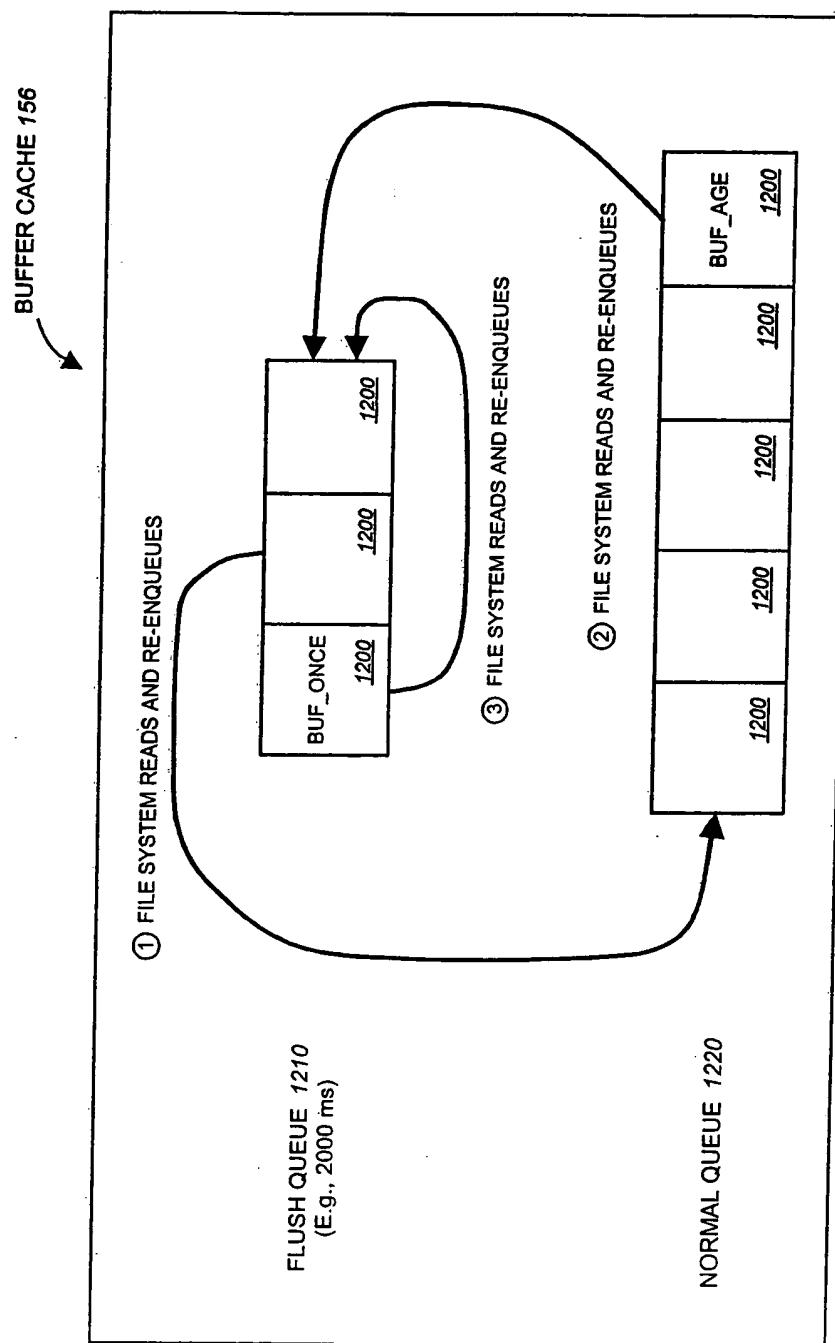


FIG. 12